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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,406	01/03/2002	Gert Blankenstein	2100-0015	9515

23980 7590 12/30/2003

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EXAMINER

SIEW, JEFFREY

ART UNIT PAPER NUMBER

1637

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,406

Applicant(s)

BLANKENSTEIN ET AL.

Examiner

Jeffrey Siew

Art Unit

1637

~ The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4,6,11-17,19,20 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al (US6,506,609 Jan 14, 2003).

Wada et al teach an apparatus and method of hydrodynamically focusing liquid and target surface by providing a target surface as part of one of plurality of surfaces together defining flow path, providing a flow path with a set of three fluid inlets with at least one fluid outlet such that flow through one is guided between other two flows, providing liquid inlets control means, directing flow and allow liquid to interact with selected target surface (see whole doc. esp.col.3 lines 12-20 & Fig. 1A). They teach chemical reactions such as binding and enzymatic reactions (see col. 19 lines 31-45). They teach polypeptide and nucleic acids as target and functionalized microbeads (see col. 7 line 50-55). They teach substrate such as glass or silicon or polysilicon and other polymeric materials (see col. 25 lines 40-45 & 50-55). They teach electroosmotic flows (see col. 29 line 3). They teach an apparatus with substrate, set of

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bounding surfaces, set of three fluid inlets and flow control (see whole doc. esp.fig. 1A). They teach cells (see col. 7 line 52).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3,11-17,19,20 are rejected under 35 U.S.C. 102(b) as being anticipated by Blankenstein (WO98/10267 12 March 1998).

Blankenstein et al teach an apparatus and method of hydrodynamically focusing liquid and target surface by providing a target surface as part of one of plurality of surfaces together defining flow path, providing a flow path with a set of three fluid inlets with at least one fluid outlet such that flow through one is guided between other two flows, providing liquid inlets control means, directing flow and allow liquid to interact with selected target surface (see whole doc. esp. abstract & Fig. 6). They teach binding and chemical interactions with DNA (see page 26). They teach an apparatus with substrate, set of bounding surfaces, set of three fluid inlets and flow control (see whole doc.. esp.fig. 6 & Figure 16 and page 29). They teach cells (abstract). They teach silicon or polymers such Teflon (see page 7 line 32). They teach Reyholds (see page 13 line 26).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenstein et al (WO98/10267 12 March 1998).

The teachings of Blankenstein et al are described previously. They teach reyholds as it relates to the drag on the particles as related to Stokes law (seepage 13-14).

Blankenstein et al do not explicitly teach the Reynolds number lower than 1.

One of ordinary skill in the art would have been motivated to lower the Reynolds number of the flow in order to reduce the drag on the particle. It was well known that the higher the reynolds number the greater the tubulence. It would have been prima facie obvious to lower the

Reynolds' number of the flow to decrease turbulence and provide more laminar flow thus decreasing the drag on particles through the passageway.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenstein et al (WO98/10267 12 March 1998) or Wada et al (US6,506,609 Jan 14, 2003) either in view of Parce et al (US5,972,187 Oct. 26, 1999).

The teachings of Blankenstein et al and Wada et al are described previously.

Neither Blankenstein et al and Wada et al teach the electrodes.

Parce et al teach electrodes to drive the migration path (see whole doc. esp. col 12.).

One of ordinary skill in the art would have been motivated to apply Parce et al's electrodes to either Blankenstein et al or Wada et al's device in order to electrokinetically migrate the material. Parce et al states that electrokinetic migration allows fast control of movement of materials (see col.2 line 50-55). It would have been prima facie obvious to apply Parce et al's electrodes to electrokinetically move material in either Blankenstein et al or Wada et al's device in order to provide fast control of movement and flow.

SUMMARY

5. Claims 5 & 7 are objected to for depending on rejected claim. There is no prior art that teach or suggest the method of further adding covalently binding oligonucleotide already immobilized on surface or amino acid to peptide immobilized on surface.

CONCLUSION

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Siew whose telephone number before January 22, 2003 is (703) 305-3886 and thereafter can be reached at 571-272-0787. The e-mail address is Jeffrey.Siew@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route. The examiner is on flex-time schedule and can best be reached on weekdays from 6:30 a.m. to 3 p.m. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703)-308-1119.

Any inquiry of a general nature, matching or filed papers or relating to the status of this application or proceeding should be directed to the Tracey Johnson for Art Unit 1637 whose telephone number is (703)-305-2982.


Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official

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Gazette, 1096 OG 30 (November 15, 1989). The CM1 Center numbers for Group 1600 are Voice (703) 308-3290 and FAX (703)-308-4242.


JEFFREY SIEW
PRIMARY EXAMINER

December 22, 2003